

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a first n-channel TFT provided over a substrate;
a second n-channel TFT provided over said substrate;
a p-channel TFT over said substrate;
a first impurity region and a second impurity region provided in a semiconductor layer of the first n-channel TFT and provided outside a gate electrode;

a third impurity region provided in a semiconductor layer of the second n-channel TFT and provided so as to be partially overlapped with a gate electrode, the third impurity region provided outside the gate electrode;

a fourth impurity region provided in a semiconductor layer of the p-channel TFT and provided so as to be partially overlapped with a gate electrode; and

a fifth impurity region provided in the semiconductor layer of the p-channel TFT and provided over a substrate outside a gate electrode.

2. A device according to claim 1, wherein the second n-channel TFT is provided in a buffer circuit.

3. A semiconductor device comprising:

a first n-channel TFT provided over a substrate;

a second n-channel TFT provided over said substrate;

a p-channel TFT provided over said substrate;

a first impurity region that is provided in a semiconductor layer of the first n-channel TFT and is to be an LDD region;

a second impurity region of a source/drain region provided in the semiconductor layer of the first n-channel TFT outside a gate electrode;

a third impurity region that is provided in a semiconductor layer of the second n-channel TFT and is to be an LDD region, said third impurity region is provided so as to be partially overlapped with a gate electrode, and the third impurity region to be a source/drain region is provided outside the gate electrode;

a fourth impurity region that is formed in a semiconductor layer of the p-channel TFT and is to be an LDD region, said fourth impurity region provided so as to be partially overlapped with a gate electrode; and

a fifth impurity region of a source/drain region provided in the semiconductor layer of the p-channel TFT outside a gate electrode.

4. A device according to claim 3, wherein the second n-channel TFT is provided in a buffer circuit.

5. A semiconductor device comprising:

a first n-channel TFT provided over a substrate and in a pixel

portion;

a second n-channel TFT provided over said substrate and in a driving circuit;

a p-channel TFT provided over said substrate in said driving circuit;

a first impurity region and a second impurity region provided in a semiconductor layer of the first n-channel TFT and provided outside a gate electrode;

a third impurity region provided in a semiconductor layer of the second n-channel TFT and provided so as to be partially overlapped with a gate electrode, and the third impurity region provided outside the gate electrode;

a fourth impurity region provided in a semiconductor layer of the p-channel TFT and provided so as to be partially overlapped with a gate electrode; and

a fifth impurity region provided in the semiconductor layer of the p-channel TFT outside a gate electrode.

6. A device according to claim 5, wherein the second n-channel TFT is provided in a buffer circuit.

7. A semiconductor device comprising:

a first n-channel TFT provided over a substrate in a pixel portion;

a second n-channel TFT provided over said substrate in a driving circuit;

a p-channel TFT provided over said substrate in said driving circuit;

a first impurity region that is provided in a semiconductor layer of the first n-channel TFT and is to be an LDD region;

a second impurity region of a source/drain region provided outside a gate electrode and in the semiconductor layer of the first n-channel TFT;

a third impurity region that is provided in a semiconductor layer of the second n-channel TFT and is to be an LDD region, said third impurity region provided so as to be partially overlapped with a gate electrode, the third impurity region of a source/drain region provided outside the gate electrode, and

a fourth impurity region that is provided in a semiconductor layer of the p-channel TFT and is to be an LDD region, said fourth impurity region provided so as to be partially overlapped with a gate electrode, and

a fifth impurity region of a source/drain region provided outside a gate electrode.

8. A device according to claim 7, wherein the second n-channel TFT is provided in a buffer circuit.

9. A device according to claim 1 wherein said semiconductor device is a personal computer.
10. A device according to claim 1 wherein said semiconductor device is a video camera.
11. A device according to claim 1 wherein said semiconductor device is a mobile computer.
12. A device according to claim 1 wherein said semiconductor device is a goggle type display.
13. A device according to claim 1 wherein said semiconductor device is a player using a record medium.
14. A device according to claim 1 wherein said semiconductor device is a digital camera.
15. A device according to claim 1 wherein said semiconductor device is a front type projector.
16. A device according to claim 1 wherein said semiconductor device is a rear type projector.

17. A device according to claim 1 wherein said semiconductor device is a portable telephone.

18. A device according to claim 1 wherein said semiconductor device is an electronic book.

19. A device according to claim 3 wherein said semiconductor device is a personal computer.

20. A device according to claim 3 wherein said semiconductor device is a video camera.

21. A device according to claim 3 wherein said semiconductor device is a mobile computer.

22. A device according to claim 3 wherein said semiconductor device is a goggle type display.

23. A device according to claim 3 wherein said semiconductor device is a player using a record medium.

24. A device according to claim 3 wherein said semiconductor device is a digital camera.

25. A device according to claim 3 wherein said semiconductor device is a front type projector.
26. A device according to claim 3 wherein said semiconductor device is a rear type projector.
27. A device according to claim 3 wherein said semiconductor device is a portable telephone.
28. A device according to claim 3 wherein said semiconductor device is an electronic book.
29. A device according to claim 5 wherein said semiconductor device is a personal computer.
30. A device according to claim 5 wherein said semiconductor device is a video camera.
31. A device according to claim 5 wherein said semiconductor device is a mobile computer.
32. A device according to claim 5 wherein said semiconductor device is a goggle type display.

33. A device according to claim 5 wherein said semiconductor device is a player using a record medium.

34. A device according to claim 5 wherein said semiconductor device is a digital camera.

35. A device according to claim 5 wherein said semiconductor device is a front type projector.

36. A device according to claim 5 wherein said semiconductor device is a rear type projector.

37. A device according to claim 5 wherein said semiconductor device is a portable telephone.

38. A device according to claim 5 wherein said semiconductor device is an electronic book.

39. A device according to claim 7 wherein said semiconductor device is a personal computer.

40. A device according to claim 7 wherein said semiconductor device is a video camera.

41. A device according to claim 7 wherein said semiconductor device is a mobile computer.

42. A device according to claim 7 wherein said semiconductor device is a goggle type display.

43. A device according to claim 7 wherein said semiconductor device is a player using a record medium.

44. A device according to claim 7 wherein said semiconductor device is a digital camera.

45. A device according to claim 7 wherein said semiconductor device is a front type projector.

46. A device according to claim 7 wherein said semiconductor device is a rear type projector.

47. A device according to claim 7 wherein said semiconductor device is a portable telephone.

48. A device according to claim 7 wherein said semiconductor device is an electronic book.

49. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film comprising silicon as a main component over an insulating surface;

adding a catalytic element for promoting crystallization to the amorphous semiconductor film,

conducting a first heat treatment after said adding of said catalytic element, to form a crystalline semiconductor film;

forming a barrier layer over the crystalline semiconductor film;

forming a semiconductor film containing a rare gas element in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the barrier layer;

moving the catalytic element to the semiconductor film containing the rare gas element by a second heat treatment; and

removing the semiconductor film containing the rare gas element.

50. A method according to claim 49, wherein the barrier layer is a chemical oxide film formed by ozone water.

51. A method according to claim 49, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

52. A method according to claim 49, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

53. A method according to claim 49, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

54. A method according to claim 49, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.

55. A method according to claim 49, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

56. A method according to claim 49, wherein the first heat treatment is conducted by using an electrothermal furnace.

57. A method according to claim 49, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds

of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

58. A method according to claim 49, wherein the second heat treatment is conducted by using an electrothermal furnace.

59. A method according to claim 49, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

60. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film comprising silicon as a main component over an insulating surface;

adding a catalytic element for promoting crystallization to the amorphous semiconductor film to form a crystalline semiconductor film by a first heat treatment;

irradiating the crystalline semiconductor film with laser light;

forming a barrier layer over the crystalline semiconductor film;

forming a semiconductor film containing a rare gas element

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in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the barrier layer;

moving the catalytic element to the semiconductor film containing the rare gas element by a second heat treatment; and

removing the semiconductor film containing the rare gas element.

61. A method according to claim 60, wherein the barrier layer is a chemical oxide film formed by ozone water.

62. A method according to claim 60, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

63. A method according to claim 60, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

64. A method according to claim 60, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

65. A method according to claim 60, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the

group consisting of He, Ne, Ar, Kr, and Xe.

66. A method according to claim 60, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

67. A method according to claim 60, wherein the first heat treatment is conducted by using an electrothermal furnace.

68. A method according to claim 60, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

69. A method according to claim 60, wherein the second heat treatment is conducted by using an electrothermal furnace.

70. A method according to claim 60, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

71. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film comprising silicon as a main component over an insulating surface;

adding a catalytic element for promoting crystallization to the amorphous semiconductor film to form a crystalline semiconductor film by a first heat treatment;

forming a barrier layer over the crystalline semiconductor film;

forming a semiconductor film containing a rare gas element in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the barrier layer;

moving the catalytic element to the semiconductor film containing the rare gas element by a second heat treatment;

removing the semiconductor film containing the rare gas element; and

irradiating the crystalline semiconductor film with laser light.

72. A method according to claim 71, wherein the barrier layer is a chemical oxide film formed by ozone water.

73. A method according to claim 71, wherein the barrier layer is

formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

74. A method according to claim 71, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

75. A method according to claim 71, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

76. A method according to claim 71, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.

77. A method according to claim 71, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

78. A method according to claim 71, wherein the first heat treatment is conducted by using an electrothermal furnace.

79. A method according to claim 71, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

80. A method according to claim 71, wherein the second heat treatment is conducted by using an electrothermal furnace.

81. A method according to claim 71, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

82. A method of manufacturing a semiconductor device, comprising the steps of:

forming an amorphous semiconductor film comprising silicon as a main component over an insulating surface;

adding a catalytic element for promoting crystallization to the amorphous semiconductor film;

forming a barrier layer over the amorphous semiconductor film;

forming a semiconductor film containing a rare gas element in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the barrier layer;

crystallizing the amorphous semiconductor film by a heat treatment to form a crystalline semiconductor film and moving the catalytic element to the semiconductor film containing the rare gas element;

removing the semiconductor film containing the rare gas element; and

irradiating the crystalline semiconductor film with laser light.

83. A method according to claim 82, wherein the barrier layer is a chemical oxide film formed by ozone water.

84. A method according to claim 82, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

85. A method according to claim 82, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

86. A method according to claim 82, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

87. A method according to claim 82, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.

88. A method according to claim 82, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

89. A method according to claim 82, wherein the first heat treatment is conducted by using an electrothermal furnace.

90. A method according to claim 82, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

91. A method according to claim 82, wherein the second heat treatment is conducted by using an electrothermal furnace.

92. A method according to claim 82, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the

group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

93. A method of manufacturing a semiconductor device, comprising the steps of:

adding a catalytic element for promoting crystallization to an insulating surface;

forming an amorphous semiconductor film comprising silicon as a main component over the insulating surface;

forming a barrier layer over the amorphous semiconductor film;

forming a semiconductor film containing a rare gas element in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the amorphous semiconductor film;

crystallizing the amorphous semiconductor film by a heat treatment to form a crystalline semiconductor film and moving the catalytic element to the semiconductor film containing the rare gas element;

removing the semiconductor film containing the rare gas element; and

irradiating the crystalline semiconductor film with laser light.

94. A method according to claim 93, wherein the barrier layer is a chemical oxide film formed by ozone water.

95. A method according to claim 93, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.
96. A method according to claim 93, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.
97. A method according to claim 93, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.
98. A method according to claim 93, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.
99. A method according to claim 93, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.
100. A method according to claim 93, wherein the first heat treatment

is conducted by using an electrothermal furnace.

101. A method according to claim 93, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

102. A method according to claim 93, wherein the second heat treatment is conducted by using an electrothermal furnace.

103. A method according to claim 93, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

104. A method of manufacturing a semiconductor device, comprising the steps of:

adding a catalytic element for promoting crystallization to an insulating surface;

forming an amorphous semiconductor film comprising silicon as a main component over the insulating surface;

forming a barrier layer over the amorphous semiconductor film;

forming a semiconductor film containing a rare gas element

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in a concentration of $1 \times 10^{19}/\text{cm}^3$ to $1 \times 10^{22}/\text{cm}^3$ over the amorphous semiconductor film;

adding a rare gas element to the semiconductor film containing the rare gas element;

crystallizing the amorphous semiconductor film by a heat treatment to form a crystalline semiconductor film and moving the catalytic element to the semiconductor film containing the rare gas element;

removing the semiconductor film containing the rare gas element; and

irradiating the crystalline semiconductor film with laser light.

105. A method according to claim 104, wherein the barrier layer is a chemical oxide film formed by ozone water.

106. A method according to claim 104, wherein the barrier layer is formed by oxidizing a surface of the amorphous semiconductor film by a plasma treatment.

107. A method according to claim 104, wherein the barrier layer is formed by irradiating UV-rays in an atmosphere containing oxygen to generate ozone, thereby oxidizing a surface of the amorphous semiconductor film.

108. A method according to claim 104, wherein the barrier layer is a porous film formed with a film thickness of 1 to 10 nm.

109. A method according to claim 104, wherein the rare gas element is one kind or a plurality of kinds of elements selected from the group consisting of He, Ne, Ar, Kr, and Xe.

110. A method according to claim 104, wherein the first heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

111. A method according to claim 104, wherein the first heat treatment is conducted by using an electrothermal furnace.

112. A method according to claim 104, wherein the second heat treatment is conducted by radiation from one kind or a plurality of kinds of lamps selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, and a high-pressure mercury lamp.

113. A method according to claim 104, wherein the second heat

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treatment is conducted by using an electrothermal furnace.

114. A method according to claim 104, wherein the catalytic element is one kind or a plurality of kinds of elements selected from the group consisting of Fe, Ni, Co, Ru, Rh, Pd, Os, Ir, Pt, Cu, and Au.

115. A method of manufacturing a semiconductor device, comprising:
forming a semiconductor layer over an insulating surface;
forming an insulating film over the semiconductor layer;
forming a first-shaped conductive layer over the insulating film;
forming a second-shaped conductive layer from the first-shaped conductive layer;
adding an impurity element of one conductivity to the semiconductor layer, using the second-shaped conductive layer as a mask, to form a first impurity region;
adding an impurity element of one conductivity to a selected region of the semiconductor layer, using the second-shaped conductive layer as a mask, to form second and third impurity regions;
and
adding an impurity element of conductivity opposite to the one conductivity to a selected region of the semiconductor layer, using the second-shaped conductive layer as a mask, to form fourth

and fifth impurity regions.

116. A method according to claim 115, wherein the impurity of one conductivity comprises an impurity imparting an n-type.

117. A method of manufacturing a semiconductor device, comprising:
forming a semiconductor layer over an insulating surface;
forming an insulating film over the semiconductor layer;
forming a first-shaped conductive layer over the insulating film;

forming a second-shaped conductive layer from the first-shaped conductive layer;

adding an impurity element of one conductivity to the semiconductor layer in a first dose amount, using the second-shaped conductive layer as a mask, to form a first impurity region;

adding an impurity element of one conductivity to a selected region of the semiconductor layer in a second dose amount, using the second-shaped conductive layer as a mask, to form second and third impurity regions; and

adding an impurity element of conductivity opposite to the one conductivity to a selected region of the semiconductor layer, using the second-shaped conductive layer as a mask, to form fourth and fifth impurity regions.

118. A method according to claim 117, wherein the impurity of one conductivity comprises an impurity imparting an n-type.

119. A method according to claim 49 wherein said semiconductor device is a personal computer.

120. A method according to claim 49 wherein said semiconductor device is a video camera.

121. A method according to claim 49 wherein said semiconductor device is a mobile computer.

122. A method according to claim 49 wherein said semiconductor device is a goggle type display.

123. A method according to claim 49 wherein said semiconductor device is a player using a record medium.

124. A method according to claim 49 wherein said semiconductor device is a digital camera.

125. A method according to claim 49 wherein said semiconductor device is a front type projector.

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126. A method according to claim 49 wherein said semiconductor device is a rear type projector.

127. A method according to claim 49 wherein said semiconductor device is a portable telephone.

128. A method according to claim 49 wherein said semiconductor device is an electronic book.

129. A method according to claim 60 wherein said semiconductor device is a personal computer.

130. A method according to claim 60 wherein said semiconductor device is a video camera.

131. A method according to claim 60 wherein said semiconductor device is a mobile computer.

132. A method according to claim 60 wherein said semiconductor device is a goggle type display.

133. A method according to claim 60 wherein said semiconductor device is a player using a record medium.

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134. A method according to claim 60 wherein said semiconductor device is a digital camera.

135. A method according to claim 60 wherein said semiconductor device is a front type projector.

136. A method according to claim 60 wherein said semiconductor device is a rear type projector.

137. A method according to claim 60 wherein said semiconductor device is a portable telephone.

138. A method according to claim 60 wherein said semiconductor device is an electronic book.

139. A method according to claim 71 wherein said semiconductor device is a personal computer.

140. A method according to claim 71 wherein said semiconductor device is a video camera.

141. A method according to claim 71 wherein said semiconductor device is a mobile computer.

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142. A method according to claim 71 wherein said semiconductor device is a goggle type display.

143. A method according to claim 71 wherein said semiconductor device is a player using a record medium.

144. A method according to claim 71 wherein said semiconductor device is a digital camera.

145. A method according to claim 71 wherein said semiconductor device is a front type projector.

146. A method according to claim 71 wherein said semiconductor device is a rear type projector.

147. A method according to claim 71 wherein said semiconductor device is a portable telephone.

148. A method according to claim 71 wherein said semiconductor device is an electronic book.

149. A method according to claim 82 wherein said semiconductor device is a personal computer.

150. A method according to claim 82 wherein said semiconductor device is a video camera.

151. A method according to claim 82 wherein said semiconductor device is a mobile computer.

152. A method according to claim 82 wherein said semiconductor device is a goggle type display.

153. A method according to claim 82 wherein said semiconductor device is a player using a record medium.

154. A method according to claim 82 wherein said semiconductor device is a digital camera.

155. A method according to claim 82 wherein said semiconductor device is a front type projector.

156. A method according to claim 82 wherein said semiconductor device is a rear type projector.

157. A method according to claim 82 wherein said semiconductor device is a portable telephone.

158. A method according to claim 82 wherein said semiconductor device is an electronic book.

159. A method according to claim 93 wherein said semiconductor device is a personal computer.

160. A method according to claim 93 wherein said semiconductor device is a video camera.

161. A method according to claim 93 wherein said semiconductor device is a mobile computer.

162. A method according to claim 93 wherein said semiconductor device is a goggle type display.

163. A method according to claim 93 wherein said semiconductor device is a player using a record medium.

164. A method according to claim 93 wherein said semiconductor device is a digital camera.

165. A method according to claim 93 wherein said semiconductor device is a front type projector.

166. A method according to claim 93 wherein said semiconductor device is a rear type projector.

167. A method according to claim 93 wherein said semiconductor device is a portable telephone.

168. A method according to claim 93 wherein said semiconductor device is an electronic book.

169. A method according to claim 104 wherein said semiconductor device is a personal computer.

170. A method according to claim 104 wherein said semiconductor device is a video camera.

171. A method according to claim 104 wherein said semiconductor device is a mobile computer.

172. A method according to claim 104 wherein said semiconductor device is a goggle type display.

173. A method according to claim 104 wherein said semiconductor device is a player using a record medium.

174. A method according to claim 104 wherein said semiconductor device is a digital camera.

175. A method according to claim 104 wherein said semiconductor device is a front type projector.

176. A method according to claim 104 wherein said semiconductor device is a rear type projector.

177. A method according to claim 104 wherein said semiconductor device is a portable telephone.

178. A method according to claim 104 wherein said semiconductor device is an electronic book.

179. A method according to claim 115 wherein said semiconductor device is a personal computer.

180. A method according to claim 115 wherein said semiconductor device is a video camera.

181. A method according to claim 115 wherein said semiconductor device is a mobile computer.

190. A method according to claim 117 wherein said semiconductor device is a video camera.

191. A method according to claim 117 wherein said semiconductor device is a mobile computer.

192. A method according to claim 117 wherein said semiconductor device is a goggle type display.

193. A method according to claim 117 wherein said semiconductor device is a player using a record medium.

194. A method according to claim 117 wherein said semiconductor device is a digital camera.

195. A method according to claim 117 wherein said semiconductor device is a front type projector.

196. A method according to claim 117 wherein said semiconductor device is a rear type projector.

197. A method according to claim 117 wherein said semiconductor device is a portable telephone.

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198. A method according to claim 117 wherein said semiconductor device is an electronic book.

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